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I. Background and Jurisdiction of the Commission

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Act 62 as codified at S.C. Code Ann. §58-37-40(B)(1) states that an IRP shall include the following:

- (a) a long-term forecast of the utility's sales and peak demand under various reasonable scenarios;
- (b) the type of generation technology proposed for a generation facility contained in the plan and the proposed capacity of the generation facility, including fuel cost sensitivities under various reasonable scenarios;
- (c) projected energy purchased or produced by the utility from a renewable energy resource;
- (d) a summary of the electrical transmission investments planned by the utility;
- (e) several resource portfolios developed with the purpose of fairly evaluating the range of demand-side, supply-side, storage, and other technologies and services available to meet the utility's service obligations. Such portfolios and evaluations must include an evaluation of low, medium, and high cases for the adoption of renewable energy and cogeneration, energy efficiency, and demand response measures, including consideration of the following:
 - (i) customer energy efficiency and demand response programs;
 - (ii) facility retirement assumptions; and
 - (iii) sensitivity analyses related to fuel costs, environmental regulations, and other uncertainties or risks;
- (f) data regarding the utility's current generation portfolio, including the age, licensing status, and remaining estimated life of operation for each facility in the portfolio;
- (g) plans for meeting current and future capacity needs with the cost estimates for all proposed resource portfolios in the plan;
- (h) an analysis of the cost and reliability impacts of all reasonable options available to meet projected energy and capacity needs; and
- (i) a forecast of the utility's peak demand, details regarding the amount of peak demand reduction the utility expects to achieve, and the actions the utility proposes to take in order to achieve that peak demand reduction.

S.C. Code Ann § 58-37-40 (C)(1) (2019) directs the Commission to hold a proceeding to review each electrical utility's IRP, and as part of the IRP filings, the Commission shall allow intervention by interested parties. The Commission is also tasked with establishing a procedural schedule to permit reasonable discovery after an IRP is filed, which is intended to assist parties with obtaining evidence concerning the IRP, including the reasonableness and prudence of the plan and alternatives to the plan raised by intervening parties.

On June 12, 2019, during its weekly business meeting the Commission voted to have the four jurisdictional electric utilities⁴, the ORS, and other interested parties provide commentary or proposed IRP procedural schedules relating to the filing date for IRP, hearing date, prefile testimony dates, intervention dates, and any other important matters pertaining to the filing of IRP.

The Commission's decision to request comments from the four jurisdictional electric utilities, ORS, and other interested parties prompted the Chief Clerk/Executive Director of the Commission (the "Clerk") to send a letter to counsel for the ORS and the jurisdictional electric utilities ("utilities") requesting each to provide commentary on proposed IRP procedural schedules pursuant to S.C. Code Ann § 58-37-40.⁵ The parties were requested to focus their comments on IRP procedural guidelines such as the filing date, hearing date(s), and any other dates in which the parties found to be relevant. The Clerk requested that the parties' file their comments with the Commission on or before June 19, 2019.⁶

A. Notice and Intervention

As part of the discovery process in an IRP filing, the Commission shall allow intervention by interested parties. *See* S.C. Code Ann § 58-37-40 (C)(1) (2019). Throughout various times in

⁴ See the Clerk's letter dated June 13 2019, in Docket No. 2019-224-E and 2019-225-E.

⁵ Id.

⁶ Id.

DESC's 2020 IRP filing proceeding, eight interested parties filed Petitions to Intervene with the Commission.

The South Carolina Coastal Conservation League ("CCL"), Upstate Forever, and the Southern Alliance for Clean Energy ("SACE") filed to Intervene in these dockets on August 19, 2019. On September 11, 2019 the Commission issued Order Nos. 2019-644 and 2019-645 granting the Petitions to Intervene.

The South Carolina Solar Business Alliance ("SBA") filed petitions to intervene in both Docket 2019-224-E and 2019-225-E on June 14, 2019. The Commission granted the SBA's Petitions on June 26, 2019 in Order Nos. 2019-467 and 2019-468.

Johnson Development Associates, Inc. ("Johnson") filed Petitions to Intervene in these dockets on August 20, 2019. On September 11, 2019 the Commission granted Johnson's Petition in Order Nos. 2019-642 and 2019-641.

Vote Solar filed its Petition to Intervene in both these dockets on September 14, 2020. On October 1, 2020 the Commission granted the Petition to Intervene in Order Nos. 2020-657 and 2020-658.

On October 9, 2020 Cherokee County Cogeneration Partners, LLC ("Cherokee Cogen") filed a Petition to Intervene in Docket No. 2019-224-E. By its Order No. 2020-714 dated October 21, 2020 the Commission granted the Petition.

Nucor Steel-South Carolina ("Nucor") filed a Petition with the Commission to intervene in Docket No. 2019-225-E on October 27, 2020. By Order No. 2020-108-H issued on November 9, 2020 the Commission granted Nucor's Petition to Intervene.

On March 31, 2021 Commission Hearing Officer David Butler granted the Petition to Intervene Out of Time of the Sierra Club and the Natural Resources Defense Council (“NRDC”) in Dockets 2019-224-E and 2019-225-E by Order No. 2021-37-H.

In a letter dated June 17, 2019, Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”) (collectively “Duke” or “Companies”) addressed the Commission’s request for the utilities, ORS, and other interested parties to file proposed procedural schedules related to the implementation of S.C. Code Ann. § 58-37-40, and each utility's IRP.⁷ Duke clarified in its letter that DEP filed a comprehensive IRP on November 1, 2018 in Docket No. 2018-8-E. Further, that given the biennial nature of its IRP process, that they intended to file its annual update to its comprehensive IRP by November 1, 2019 and a comprehensive IRP on September 15, 2020, to meet its obligations under S.C. Code Ann. § 58-37-40(A) to submit a comprehensive IRP once every three years. DEC filed a comprehensive IRP on August 31, 2018, in Docket No. 2018-10-E. As with DEP, DEC stated that given the biennial nature of its IRP process that DEC intended to file its annual update to its comprehensive IRP by August 30, 2019, and a comprehensive IRP on September 15, 2020.

On June 19, 2019, Duke further clarified its position by filing another letter in which the companies stated that they did not intend to file comprehensive IRPs until 2020 to meet their obligations under S.C. Code Ann. § 58-37-40(A). Based on these letters, the Commission did not require DEP or DEC to further update their 2018 and 2019 IRPs to comply with the requirements of 2019 Act No. 62 in 2019.

In yet another filing made on July 5, 2019, Duke addressed the suggestion of certain interested parties that the Commission initiate a generic proceeding for the purpose of establishing

⁷ See Duke’s letter dated June 17, 2019 in Docket No. 2019-224-E and 2019-225-E.

guidelines to be used by the utilities in preparing and filing their IRPs prior to Commission review.⁸ Act 62 establishes detailed and specific guidelines regarding IRPs to be filed by electric utilities.⁹ The Act also sets forth a comprehensive procedure by which the Commission, ORS, and other interested parties can review the proposed IRP to determine whether the electric utility complied with the statutory criteria adopted by the South Carolina General Assembly in S.C. Code Ann. §58-37-40(C).¹⁰ Duke stated that the requirements and procedures provide in Act 62 provided ample guidance to the Commission to determine the sufficiency of IRPs filed by utilities. Duke requested that the Commission require the utilities to file their comprehensive IRPs according to the utility-proposed schedules in a manner that complies with the “abundant guidance” given in Act 62.¹¹

On December 30, 2019, the Clerk’s office sent all counsel of record in Docket Nos. 2019-224-E and 2019-225-E a Notice of Generic Workshop On Filing Requirements For Integrated Resource Plans (“Notice”).¹² The Notice stated, “[t]he Public Service Commission of South Carolina (the Commission) will be conducting a Generic Workshop related to the filing requirement for Integrated Resource Plans and the Commission would like to hear from interested stakeholders regarding suggestions for filing requirements for Integrated Resource Plan.”¹³ Interested stakeholders that wished to present a presentation at the January 30th workshop were instructed in the Notice to notify the Commission in writing by January 22, 2020, of such and to include a brief overview of its presentation.

⁸ See Duke’s letter dated July 5, 2019 in Dockets 2019-224-E and 2019-225-E.

⁹ See S.C. Code Ann. § 58-37-40(B)(1).

¹⁰ See Duke’s letter dated July 5, 2019 in Docket Nos. 2019-224-E and 2019-225-E.

¹¹ Id.

¹² See the Notice of Generic Workshop on Filing Requirements for Integrated Resource Plans in Docket Nos. 2019-224-E and 2019-225-E.

¹³ See the Notice of Generic Workshop on Filing Requirements for Integrated Resource Plans in Docket No 2019-224-E and 2019-225-E.

Duke received a Notice dated December 30, 2019, in which the Commission stated that they would be holding a generic workshop on January 30, 2020, for interested stakeholders to provide comments on procedural guidelines pertaining to how electric utilities were to file their IRP with the Commission beginning in 2020. On January 17, 2020, Duke filed a letter with the Commission voicing its concerns regarding the Commission opening a generic docket in lieu of promulgating regulations. Duke further opined that while written comments or an allowable *ex parte* briefing are both suitable and lawful paths to provide the Commission that information, a generic docket in lieu of promulgating regulations is not.

On January 22, 2020, the Commission issued Order No. 2020-63 canceling the January 30, 2020, workshop and instead requested interested parties to file their comments pertaining to IRP filing procedures by January 30, 2020, along with their suggestions on how to proceed with next step of process.¹⁴

On January 30, 2020, Duke filed its comments pertaining to the Commission Order No. 2020-63, issued by the Commission on January 22, 2020.¹⁵ In that letter, Duke reiterated its opinion that the best course of action for the Commission would be to “heed the direction of Act 62 by allowing the Companies their opportunity to meet Act 62 obligations by making IRP filings consistent with the statute, and, after litigated hearings, identify if there are any deficiencies in those filings as compared to the detailed requirements of the statute.” The Companies further detailed what it believed to be both the correct process and contents of an IRP filing under Act 62.¹⁶

¹⁴ See Commission Order No. 2020-63 in Docket No. 2019-226-E.

¹⁵ See Joint Comments of DEC and DEP letter dated January 30, 2020 in Dockets 2019-224-E and 2019-225-E.

¹⁵ Id.

¹⁶ Id.

The Intervenors CCL, SACE, SBA and Johnson also filed comments on January 30, 2020, pursuant to Commission Order No. 2020-63, and generally took the position that Act 62 vested the Commission with the authority and duty to implement further guidance on IRP filing requirements, and that it therefore would be appropriate for the Commission to use a generic docket to solicit recommendations from interested parties and to provide guidance to electric utilities on the development of their IRPs.¹⁷ Other interested parties filed comments pursuant to the Commission's request in Order No. 2020-636 on January 30, 2020.¹⁸

On September 1, 2020, both DEC and DEP filed their 2020 IRPs with the Commission. On November 6, 2020, Duke filed numerous corrections or changes to the IRPs initially filed in September.

II. Discussion of the Hearing

The merits hearing was held in a virtual setting beginning at 10:00am on April 26, 2021, with the Honorable Justin T. Williams presiding as Chairman. Representing Duke and appearing before this Commission in this Docket was Frank R. Ellerbe III, Esquire, E. Brett Breitschwerdt, Esquire, Samuel J. Wellborn, Heather Shirley Smith, Esquire and Rebecca J. Dulin, Esquire. Representing The South Carolina Office of Regulatory Staff and appearing before this Commission in this Docket was Jeffrey M. Nelson, Esquire, and Andrew M. Bateman, Esquire. Representing South Carolina Solar Business Alliance, Incorporated and appearing before this Commission in this Docket was Richard L. Whitt, Esquire, Benjamin L. Snowden, Esquire and John D. Burns, Esquire. Representing South Carolina Coastal Conservation League, Upstate Forever, and Southern Alliance for Clean Energy and appearing before this Commission in this Docket was Gudrun Elise Thompson, Esquire. Representing the Sierra Club and the Natural

¹⁷ See CCL and SACE's letter dated January 30, 2020 in Docket No. 2019-224-E and 2019-225-E.

¹⁸ See SBA and JDA's letter dated January 30, 2020 in Dockets 2019-224-E and 2019-225-E.

Resources Defense Council were Kate Lee Mixson, Esquire and Gudrun E. Thompson, Esquire. Representing Johnson Development Associates, Incorporated and appearing before this Commission in the Docket was Weston Adams, III, Esquire and Courtney E. Walsh, Esquire. Representing Cherokee County Cogeneration and appearing before this Commission in this Docket was Jack Pringle, Esquire.

A. DEC/DEP Testimony

On November 13, 2020, Duke witnesses' Brian Bak, Dawn Santoianni, Nick Wintermantel, Dewey Roberts, Glen Snider, Leon Brunson and Matthew Kalembe filed their direct testimony with the Commission in Docket Nos. 2019-224-E and 2019-225-E. The Duke witnesses explained the processes and calculations used in developing the Companies IRPs and urged the Commission to adopt the IRPs as revised by the Companies corrections and changes filed on November 6, 2020.

Duke also filed Rebuttal Testimony with the Commission on March 19, 2021 responding to the Direct Testimony of ORS and the Intervenors.

Witness Bak is employed by Duke Energy Business Services, LLC, a service company affiliate of DEC and DEP, as Manager Demand Side Management ("DSM") Analytics. In his testimony he provided an overview and background of the Companies' Energy Efficiency ("EE") and DSM programs, how the programs were developed and improved upon with the support of stakeholder input, and how the Companies determine the cost-effectiveness of the EE/DSM programs. He also discussed the recently completed Market Potential Studies, which provide estimates of the technical, economic, and achievable potential for EE savings within the DEC and DEP service areas, and explained how the Companies used the Market Potential Studies for

purposes of the IRP. Finally, he explained the Companies' plans for additional winter demand-side peak savings.

Duke Witness Santoianni is employed by Duke Energy Carolinas, LLC as State Energy Policy Director for North Carolina. In her direct testimony she provided her perspective on the carbon policies under consideration in North Carolina as part of the NC CEP, the intersection of these policies with the Companies' filed Integrated Resource Plans ("IRPs"), and how the Companies evaluate the impact of potential policies on customers across our South Carolina and North Carolina service territories. Her testimony also provided her assessment on how investors and stakeholders have viewed Duke's 2020 IRPs, their climate goals and the NC CEP goals.

Witness Wintermantel is a Principal Consultant and Partner at Astrapé Consulting which is a consulting firm that provides expertise in resource planning and resource adequacy to utilities across the United States and internationally. His testimony introduced and summarized the 2020 Resource Adequacy Study that Astrapé conducted on behalf of Duke. While Astrapé conducted a separate study for both DEC and DEP, his testimony referred to the two studies collectively as the "Resource Adequacy Study." This study was performed by Astrapé at the request of DEC and DEP as an update to the resource adequacy studies performed in 2016. The primary purpose of this study is to provide Duke system planners with information on physical system reliability and system costs that could be expected with various reserve margin planning targets. Witness Wintermantel also introduced and summarized the Storage Effective Load Carrying Capability ("ELCC") Study that Astrapé conducted for the Companies.

Witness Glen Snider is employed by Duke as Director of Carolinas Integrated Resource Planning and Analytics. Mr. Snider's testimony sponsored DEC and DEP's 2020 IRPs into evidence and provided information on how these IRPs comply with the requirements of S.C. Code

Ann. § 58-37-40. He further provided an overview of their goals, preparation, contents, methodologies and key conclusions, and explained the stakeholder engagement which preceded and informed these IRPs. He stated that the Companies' IRPs contemplate multiple scenarios and are dependent upon many different studies and that the best place to gain information about Dukes IRPs is from the actual IRPs themselves versus the testimony of any witness filed in these dockets. For these reasons, Witness Snider stated that the Commission should view his testimony as a companion to the IRPs. He provided multiple page references throughout his testimony to the IRP documents, as well as references to other witnesses' testimony. His testimony provided an overview and explanation of the IRPs, the work that went into them, and identified subject matter experts testifying on behalf of Duke who were available to the Commission at the hearing to respond to contested issues and Commissioner questions on specific topics.

Witness Leon Brunson is employed by Duke Energy Business Services, LLC as a Lead Load Forecast Analyst and is part of the team responsible for producing the load forecasts for the DEC and DEP service areas. His testimony provided the Commission with an overview of the load forecasting process employed by Duke and a summary of the DEC and DEP load forecasts provided in their 2020 IRPs.

Duke Witness Kalembe is the Director of Distributed Energy Technologies Planning & Forecasting for Duke Energy. He is primarily responsible for leading the team that develops the long-term forecast for distributed energy resources for each of Duke Energy's regulated utilities. His testimony summarized the solar, wind, and battery storage input assumptions that were used in the development of the Companies' 2020 IRPs. He also provided an overview of the extent to which additional solar, wind, and battery storage were selected during the portfolio development process. He explained the Storage Effective Load Carrying Capability ("ELCC") Study conducted

by Astrapé Consulting to determine the capacity value of standalone storage and storage paired with solar, and how the results of that study were applied in the 2020 IRPs. Finally, he discussed the development of the rooftop solar and electric vehicle forecasts that were included as load modifiers in the development of the Companies' demand and energy forecasts.

B. Vote Solar

Vote Solar's witness Tyler Fitch is the Regulatory Manager at Vote Solar. His testimony set forth Vote Solar's argument of climate-related risk as an emergent and material category of risks for DEC and DEP as well as the families in the Carolinas that make up the Companies' ratepayers. He discussed the implications of climate-related risks for integrated resource planning generally, then evaluate the Companies' 2020 IRPs in light of those risks. In particular, he assessed the feasibility of Duke meeting its carbon commitments while pursuing the Companies' base case with carbon policy scenario and quantified the potential costs of pursuing this scenario and meeting Dukes carbon commitments. Finally, he provided conclusions of his evaluation and provide several recommendations to the Commission for managing climate-related risk exposure in the Companies' Plans and managing climate-related risks in resource planning in general.

Mr. Fitch recommended that the Commission find that climate-related risks are a material subset of business risks, that managing climate-related risks is consistent with the multi-decadal transition to a zero-carbon energy system, that the Companies be required to adequately integrate climate-related risks and consider strategies to mitigate those risks, that the Companies be directed to make several corrections to their future plans, and that the Companies be directed to submit a revised short term action plan that builds analytical capability and stakeholder input for assessing and managing climate-related risks.

C. SBA Testimony

SBA presented the testimony of Kevin Lucas and Arne Olson. Witness Lucas is the Senior Director of Utility Regulation and Policy at the Solar Energy Industries Association (SEIA) and witness Olson is a Senior Partner with Energy and Environmental Economics, Inc. (“E3”).

Witness Lucas testified that he analyzed DEC and DEP’s 2020 IRP filing and their comportment with the requirements of Act 62. He also compared and contrasted Duke’s IRP filings to the Dominion Energy South Carolina (“DESC”) IRP which had recently been rejected by this Commission. He stated his opinion that Duke’s IRPs lacked several specific points that the Commission cited in its rejection of DESC’s IRP in Order No. 2020-832. Mr. Lucas additionally evaluated Duke’s modeling approach and assumptions on solar and storage, pointing out areas where he believed improvements are needed. Further, he deconstructed Duke’s natural gas forecast and argued that its approach is flawed and must be rejected. Finally, he evaluated the benefits of broader regionalization in reducing the cost for maintaining resource adequacy and facilitating the integration of more renewable energy.

SBA Witness Olson’s testimony described and summarized E3’s technical review of Duke’s IRPs, with specific emphasis on Duke’s resource adequacy process. He authored a full technical report which was attached to his testimony as Exhibit AO-2.

D. SACE, CCL, Sierra Club, Upstate Forever and NRDC Testimony

The testimony of James F. Wilson was filed on behalf of SACE, CCL, the Sierra Club, Upstate Forever and the NRDC in this proceeding.

Witness Wilson is an economist and independent consultant doing business as Wilson Energy Economics. He provided testimony making recommendations to the Commission related to the energy efficiency and demand side management assumptions underlying the DEC and DEP 2020 Integrated Resource Plans. Wilson testified that he conducted a review of the key

assumptions employed by Duke and its consultant, Nexant, in developing the Duke Energy South Carolina EE and DSM Market Potential Study (“MPS”) and Duke Energy North Carolina EE and DSM Market Potential Study dated June 2020. He also compared the potential winter peak capacity savings identified in the MPS to the results of the December 2020 Duke Energy Winter Peak Analysis (“WPA”) prepared by Tierra Resource Consultants in partnership with Dunskey Energy Consulting and Proctor Engineering Group. Witness Wilson’s report, titled “Review of DEC and DEP Market Potential Studies,” includes the full findings of his assessment and was attached to and filed with his Direct Testimony as Exhibit A

Witness Wilson recommended that the Commission require Duke to revise its 2020 IRP using updated EE and DSM assumptions. He recommended that Duke be required to revise its EE and DSM assumptions and calculations in several particulars in order to make Duke alter its marketing efforts and program designs to increase program participation. He further opined that Duke should give particular attention to programs to address winter peak, consistent with the findings of the WPA and that Duke be required to re-evaluate its calculations of EE/DSM potential to align its allocation of residential and commercial load to the “miscellaneous” end-use category with EIA data.

E. ORS Testimony

ORS’s witnesses’ Anthony Sandonato, Philip Hayet, Stephen J. Baron and Lane Kollen all prepared and filed direct testimony with the Commission in this proceeding on February 5, 2021. Witnesses Sandonato, Hayet and Kollen subsequently filed revised direct testimony and exhibits with the Commission on March 4, 2021. All ORS witnesses additionally filed surrebuttal testimony with the Commission on April 15, 2021 in order to address the rebuttal testimony of Duke and direct testimony of the Intervenors.

Witness Anthony Sandonato is employed by the ORS as a Senior Regulatory Manager. His revised direct and surrebuttal testimony set forth and supported ORS's recommendations resulting from the examination and review of Duke's 2020 IRPs and associated filings in this docket to determine if the Duke companies 2020 IRPs met the requirements of certain sections of Act 62. Witness Sandonato also introduced into the record the ORS Reports which were attached to his revised direct testimony as Revised Exhibit AMS-1 and AMS-2. Both the Reports and Mr. Sandonato's revised direct and surrebuttal testimonies stated the ORS opinion that the Companies' IRPs as filed with the Commission included the elements required under S.C. Code Ann. §58-37-10 40(B)(1). However, as detailed by the other ORS witnesses, certain recommendations were made by ORS to improve the Companies' future IRP filings.

ORS retained the consulting services of J. Kennedy and Associates, Inc. to assist the ORS in its review and analysis of the Companies' IRPs.¹⁹

ORS Witness Philip Hayet is a Vice President and Principal of J. Kennedy and Associates, Inc. and provided testimony that described Kennedy and Associates' review of Duke's 2020 IRPs, including the assessment of the Companies' compliance with the statutory requirements of S.C. Code Ann. Section 58-37-40 ("Section 40"), as amended by Act 62.²⁰ In his revised direct testimony, Mr. Hayet provided recommendations calling for additional information and support regarding the Company's EE/DSM plans, natural gas price forecast, environmental capital cost modeling assumptions, existing resource assumptions, generic resource assumptions, particularly solar resource costs, Short Term Action Plans, and the Companies' plans for becoming a member of the Southeast Energy Exchange Market ("SEEM"), as well as other issues.

¹⁹ See Anthony Sandonato's Revised Direct Testimony, (page 2, lines 17 - 19) in Docket No. 2019-224/225-E.

²⁰ See Philip Hayet's Revised Direct Testimony, (page 3, line 15 to page 4, line 9) in Docket No. 2019-224/225-E.

ORS Witness Stephen J. Baron is the President and a Principal of J. Kennedy and Associates, Inc. In witness Baron's testimony, he discussed his review of Duke's 2020 IRPs, and assessment of whether the Companies IRPs were in compliance with the statutory requirements of S.C. Code Ann. Section 58-37-40 ("Section 40"), as amended by Act. 62.²¹ In his direct, Witness Baron recommended, in part, that Duke provide a more detailed discussion of the specific methodology used to develop the synthetic loads for extreme low temperature periods; that the Companies further develop their methodology to model the effects of extreme low temperatures on winter peak load; and that the Companies each provide a detailed discussion in the IRPs or appendices that explains how the results of the Astrapé 2018 Solar Capacity Value Study were used to derive the assumed 1% winter peak standalone solar capacity value planning assumption used in the IRPs.

ORS Witness Lane Kollen is a Vice President and a Principal of J. Kennedy and Associates, Inc. The purpose of Witness Kollen's testimony was to describe his role in assisting ORS in its review of Duke's 2020 IRPs, including an assessment of the Companies' compliance with the statutory requirements set forth in S.C. Code Ann. Section 58-37-40 ("Section 40"), as amended by Act 62 and to summarize the conclusions and recommendations which he had primary responsibility for.²² Witness Kollen concluded that customer rate impacts are significant factors for the Commission to consider when evaluating each Portfolio and the potential pathways represented by each Portfolio. He found the lowest customer rate impact to be that of Duke's Portfolio A, which reflects the current statutory and regulatory requirements and no carbon tax. He also found that the greatest customer rate impacts are represented in Portfolios D through F, which also are the most uncertain due to the unknown future carbon reduction targets, maturity and availability of technologies, costs of the various technologies, and required infrastructure

²¹ See Stephen J. Baron's Direct Testimony, (page 2, line 20 to page 3, line 3) in Docket No. 2019-224/225-E.

²² See Lane Kollen's Revised Direct Testimony, (page 3, lines 7 to 10) in Docket No. 2019-224/225-E.

required, among other factors. In surrebuttal, Mr. Kollen stated his disagreement with certain statements or positions of Duke witness Snider and reiterated the recommendations made in his revised direct testimony.

III. Findings of Fact and Conclusions of Law

Act 62 requires the Commission to determine the “most reasonable and prudent means of meeting the electrical utility’s energy and capacity needs as of the time the plan is reviewed.” Act 62 provides seven (7) factors for the Commission to consider in the evaluation of the resource plans in the DEP and DEC IRPs. Those seven (7) factors are as follows:²³

- (a) resource adequacy and capacity to serve anticipated peak electrical load, and applicable planning reserve margins;
- (b) consumer affordability and least cost;
- (c) compliance with applicable state and federal environmental regulations;
- (d) power supply reliability;
- (e) commodity price risks;
- (f) diversity of generation supply; and
- (g) other foreseeable conditions that the commission determines to be for the public.

Act 62 also states that any resource plan accepted by the Commission “shall not be determinative of the reasonableness or prudence of the acquisition or construction of any resource or the making of any expenditure.” It further states that the utility retains the burden to prove in a future cost recovery proceeding that any investment and expenditure it makes is reasonable and prudent.

Pursuant to Act 62, Section 40 now requires the Commission to establish a proceeding to review each electric utility’s IRP. Sections 40(C)1 and (C) 2 states, the Commission shall issue a final order within 300 days that approves the utility’s IRP as is, if the Commission “determines

²³ S.C. Code Ann. §58-37-40(C), (2019).

that the proposed integrated resource plan represents the most reasonable and prudent means of meeting the electrical utility's energy and capacity needs as of the time the plan is reviewed."²⁴

On September 1, 2020, the Companies filed their annual IRP updates with the Commission in this proceeding. After an extended review of the Companies' filed IRP, the Parties made recommendations to the Companies in order to improve the IRPs. While the Companies' filed IRPs include the elements required under S.C. Code Ann. §58-37-10 40(B)(1), ORS made certain recommendations to improve the IRPs. The Companies agreed with all of ORS's recommendations except two.²⁵

As discussed below, after consideration of the evidence presented by the parties, the Commission finds that the Companies' IRPs are the most reasonable and prudent as of the time the plan is reviewed, as required by S.C. Code Ann. §58-37-40(C). However, regarding future IRP proceedings, the Commission finds that:

- The Companies must provide a technical appendix that more fully describes each of the models, presents the statistical results and shows the individual energy and peak load forecast results that were actually developed.
- The Companies must provide a more detailed discussion of the specific methodology used to develop the synthetic loads for extreme low temperature periods.
- The Companies must further develop their methodology to model the effects of extreme low temperatures on winter peak load.
- The Companies must continue to work closely with stakeholders to identify additional cost-effective EE/DSM programs to achieve greater levels of energy savings.
- The Companies must engage with stakeholders to determine if additional EE/DSM sensitivities could be modeled.
- The Companies must explore other approaches for deriving the low EE/DSM forecast.
- The Companies must review their natural gas price forecasting methodology and investigate alternative approaches.
- The Companies must enhance their coal retirement analysis methodology.

²⁴ See page 10 Section Title Act 62 IRP Requirements of Review of Dominion Energy South Carolina's 2020 Integrated Resource Planning Report; S.C. Code Ann. § 58-37-40(C)(2).

²⁵ Witness Sandonato Rebuttal, p. 2, ll. 16-19.

- The Companies must correct the capital and variable cost assumptions for CTs and battery storage resources, and re-evaluate the reasonableness of the assumptions.
- The Companies must include an additional solar generic resource option in its IRP modeling assumptions that reflects the kind of solar purchase power agreements (“PPA”) prices that may be available in the market.
- The Companies must conduct further investigation regarding solar capacity values and solar plus battery energy storage capacity values, with stakeholder input, discussed as part of a stakeholder engagement process.
- The Companies must conduct minimax regret analysis and other risk analyses in its future IRPs.
- The Companies must revise the calculation of the average retail rate impact on customers so that the assumptions and methodologies are consistent with the calculations of the PVR, except for the levelization of the capital-related costs.
- The Companies must provide details regarding the status of the Southeast Energy Exchange Market (“SEEM”), details regarding important current and planned activities, and information regarding the monetary benefits that have been or could be achieved by implementation of the SEEM.²⁶

On a going-forward basis, a number of the required long-term changes to Duke’s IRP methodologies will require meaningful input from stakeholders to be implemented in a manner consistent with Act 62. Therefore, the Commission directs Duke to convene an ongoing IRP Stakeholder Process, through which Duke and other stakeholders can work collaboratively to address the issues identified below and others that may arise from time to time as Duke’s methods and processes for devising IRPs under Act 62 evolve. Stakeholders to the IRP actions should be comprised of representatives from multiple interest groups, to include residential and industrial classes of ratepayers and the ORS, should the ORS choose to participate.²⁷

A. Load and Energy Forecast

ORS reviewed the Companies’ load (peak demand) and energy forecasting methodologies, models, and independent assumptions regarding the future population growth, economic activity, and end-use efficiency, and determined that the Companies’ 2020 IRP load and energy forecasts

²⁶ Direct Testimony of Phillip Hayet, p. 5-10.

²⁷ While participation in a stakeholder process is intended to facilitate discussion and agreement between parties, the process does not guarantee a settled outcome but leaves open the possibility that all issues discussed can and may be litigated before the Commission.

meet the requirements of Act 62, are reasonable, and represent a high level of methodological sophistication. For the residential and commercial classes, the Companies employed a Statistically Adjusted End-use (“SAE”) methodology, which provides a more precise measure of the behavioral factors that influence customer usage. The forecasts reflect embedded EE, adjusted to reflect roll-offs of EE program impacts as they reach their expected termination date. Incremental (new) EE is then reflected as a separate adjustment to the peak load forecast. The peak load forecasts do not include demand reductions that can be called by the Companies pursuant to demand side management (“DSM”). DSM is reflected as a capacity resource in the IRP.

ORS did, however, recommend that the Companies include a technical appendix in the IRPs that provides the details necessary to fully evaluate the entire forecast without substantial discovery. In particular, the Companies’ models incorporate multiple composite variables that represent the main drivers of the forecasting models (e.g., electric price, income, end-use saturation, and efficiency). The composite variables were initially opaque and were not fully described in the Companies’ IRPs, but were ultimately obtained through discovery in this IRP. ORS recommended that, while this level of detail is not needed in the IRP Report itself, the Companies should enhance Appendix C in the IRP on load and energy forecast to include a more comprehensive presentation of its forecasting methodology. ORS further specified that the inclusion of a technical appendix in the future IRPs would not supplant discovery, but rather would improve it by providing the parties with a foundation for efficiently conducting discovery.

Based upon ORS’s recommendation, and given the importance of this information, the Commission concludes that the Companies shall provide in the next annual IRP update a technical appendix that more fully describes each of the models, presents the statistical results and shows the individual energy and peak load forecast results that were actually developed.

B. Resource Adequacy - Reserve Margin

The Companies' resource planning reserve margin drives, to a large extent, the need for generating resources in the IRP. ORS determined that the Companies' winter peak reserve margin analysis meets the requirements of Act 62, is reasonable and represents a high level of methodological sophistication. ORS found that the methodology used by the Companies to develop its resource adequacy analysis, which uses Astrapé Consulting's Strategic Energy and Risk Valuation Model ("SERVM") model, is also reasonable. The SERVM model was used to perform a Monte Carlo analysis that incorporates probability-based risk profiles for numerous factors that affect resource adequacy.

The Companies used the SERVM model to develop reliability-based reserve margin calculations (i.e. the reserve margins to meet customer load without exceeding the 1 day in 10-year loss of load expectation ("LOLE") criterion) as well as economically optimal reserve margins. However, the Companies relied on the LOLE-based reserve margin results for the IRP instead of the economically optimal reserve margin results. ORS agreed with the Companies' decision and determined that the Companies' system-wide winter reserve margin of 17% is reasonable and prudent. Additionally, the Companies, in performing the LOLE analysis, assumed emergency tie-line support from seven neighboring interconnected utilities and regions.

ORS did, however, make two recommendations for the Companies' future IRPs. The SERVM analysis uses 39 years of historic weather data (1980-2018), and assumes that each of the hourly load corresponding to the 39-year data has an equal chance of occurring, including the extreme cold weather years 1982 and 1985. ORS recalculated the LOLE analysis for each Company and demonstrated the LOLE's high sensitivity towards extreme cold temperatures. Consequently, given the significance of extreme weather in the determination of reserve margins,

ORS recommended that the Companies provide a technical appendix in future IRPs that fully details the methodology used in development of the synthetic loads for extreme low temperature years. Furthermore, ORS recommended that the Companies examine, through a robust stakeholder process, alternative methodologies to develop its synthetic loads in hours in which the temperatures fall significantly below the temperatures experienced during the weather/load estimation period.

In his direct testimony, witness James F. Wilson identified his concerns regarding the IRP's overestimation of winter resource adequacy risk in the resource adequacy study and concluded that "[u]sing 39 years, and equally weighting all years, overstates the likely frequency of extreme cold going forward, and amplifies the impact of overstating the load values under extreme cold."²⁸

Witness Wilson recommended that in the future IRPs the Companies

...should study the relationship between extreme winter weather and load, and develop more sophisticated methods for estimating the potential impact of extreme winter weather on load. This research would be useful for anticipating and preparing for such events. This research would also inform the assumptions for future resource adequacy studies, and ensure consistency between load forecasting, resource adequacy modeling, and plans for managing winter peak loads.²⁹

Based upon ORS's recommendation the Commission concludes that the Companies shall provide a more detailed discussion of the specific methodology used to develop the synthetic loads for extreme low temperature periods in future IRPs as part of a comprehensive technical appendix. Additionally, the Commission concludes that the Companies shall further develop its methodology to model the effects of extreme low temperatures on winter peak load in future IRPs through the Companies' stakeholder process.

C. Energy Efficiency and Demand Side Management

²⁸ Direct Testimony of James F. Wilson p. 10.

²⁹ Direct Testimony of James F. Wilson p. 12.

The Companies' IRPs include both EE and DSM programs in their IRP analyses. ORS concluded that based on ACEEE's yearly evaluations and rankings of statewide EE efforts, the Companies "score[d] in the top quartile, which is a reasonably high ranking."³⁰ However, ORS recommended that the Companies provide additional justification for selecting the Base EE/DSM case as opposed to the High EE/DSM case for use in Portfolio A, given that the High EE/DSM case may provide greater customer benefits.³¹ Additionally, ORS recommended that the Companies evaluate sensitivity cases containing high and low levels of EE/DSM using high fuel/CO2 and low fuel/CO2 assumptions.³² ORS also recommended that the Companies should adequately justify their low EE/DSM forecasts.³³

The Companies provided additional justification for use of the base level of EE/DSM, and indicated that higher levels of DSM were aspirational in nature and the Companies stated they could encounter executability risks in being able to achieve the higher levels of EE/DSM. However, they also repeatedly indicated that they are willing to work with interested parties in the EE/DSM Collaborative process to determine if additional EE/DSM programs could be designed so that higher levels of energy savings could be achieved. Therefore, Witness Hayet stated in his surrebuttal testimony that ORS recommendation #5 was resolved, as the Companies provided sufficient justification to support use of the base EE forecast in Portfolio A, and that the Companies "should continue to work closely with stakeholders in that forum, and if the opportunity to achieve greater energy savings can be identified, the Companies should investigate those opportunities in that forum and include those results in the next comprehensive IRP in 2022."³⁴

³⁰ Direct Testimony of Anthony Sandomato Exhibit AMS-1 p. 48.

³¹ Id. p.48 Recommendation 5.

³² Id. p.49 Recommendation 6.

³³ Id. p.49 Recommendation 7.

³⁴ Direct Testimony of Philip Hayet p. 14-15.

With regard to ORS recommendation #6, concerning additional sensitivities of EE/DSM across a range of fuel and CO₂ assumptions, Witness Hayet stated in his surrebuttal testimony that in light of the Companies plan to use their new optimization model, Encompass, in future IRPs, the Companies should discuss with stakeholders whether there may be a subset of EE/DSM runs that could be more easily performed using the Encompass model.³⁵

Based upon ORS's recommendation, the Commission concludes that the Companies shall continue to work closely with stakeholders to identify additional cost-effective EE/DSM programs to achieve greater levels of energy savings, and the Companies should include those results in the next comprehensive IRP in 2022.³⁶ The Commission also concludes that by the 2021 IRP Update the Companies should engage with stakeholders to determine if additional EE/DSM sensitivities could reasonably be performed using the EnCompass modeling. The Commission cautions parties that they should be reasonable and recognize there are practical limits to the numbers of modeling runs that can be performed in an IRP. With regard to ORS Recommendation number 7, calling on the Companies to provide additional justification for its low EE/DSM forecast, the Commission finds that the Companies' response was reasonable, in that the Companies agreed "that the low case forecast assumptions and assumptions should be explored in further detail in future IRPs." The Commission finds that this should be done in the Companies' 2021 IRP Update.

D. Natural Gas Price Forecasts

The Companies developed three natural gas price forecasts, including a low, base, and high forecast. The Companies used market-based pricing for its 2021-2030 forecasts, a blended price curve that blended market-based prices with a fundamental-based forecast during the 2031 and 2034 period, and a 100% fundamental-based forecast for 2035 and beyond.

³⁵ Surrebuttal Testimony of Philip Hayet p. 16.

³⁶ Direct Testimony of Philip Hayet p. 14-15.

Several parties to the proceeding argued that the Companies' natural gas price forecasting methodology was flawed and may bias the model towards selecting natural gas resources over other resource options available. ORS Witness Hayet stated in his direct testimony that while the natural gas prices generally do not appear to be outliers compared to other industry forecasts, "there is a concern that low gas price forecasts could bias results in favor of selecting too many natural gas-fired resources."³⁷ Further, ORS's report specified that "it would be unusual" for an electric utility to lock in its gas supply for its entire system for the next ten years. SBA Witness Lucas stated in his direct testimony that the Companies use "highly questionable methodologies in the natural gas price forecast used in its modeling" which results in "gas prices that are substantially lower than fundamentals-based forecasts for 15 years – the entire duration of the IRP planning period."³⁸ Witness Lucas further provided his recommendations on an appropriate natural gas price forecasting methodology. ORS recommended that the Companies conduct further investigation of the natural gas forecasting methodology for the future IRPs through the Companies' stakeholder process.

The Companies addressed the concerns regarding the natural gas price forecasts in Witness Snider's rebuttal testimony and stated that Companies agree to "discuss [Duke's] natural gas price forecasting methodology with ORS and other stakeholders between now and the next comprehensive IRP in 2022."³⁹

Accordingly, the Commission concludes that the Companies shall review their natural gas price forecasting methodology and investigate alternative approaches to be addressed in future IRPs and vetted through the Companies' stakeholder processes.

³⁷ Direct Testimony of Philip Hayet p. 14.

³⁸ Direct Testimony of Kevin Lucas p. 5.

³⁹ Rebuttal Testimony of Glen Snider, pp. 64, 65.

E. Existing System Resources

The Companies evaluated coal retirements using an approach known as the Sequential Peaker Method (“SPM”). The SPM approach relies partly on an optimization analysis and partly on production cost modeling. ORS expressed a concern that a better approach might be to rely entirely on an optimization method and recommended the Companies perform an analysis demonstrating they did not produce suboptimal results using the SPM approach. Witness Snider detailed the SPM approach, and expressed a willingness for the Companies to collaborate with stakeholders to potentially enhance the Companies’ coal unit retirement analysis, particularly given that the Companies would be switching to the new Encompass optimization model.⁴⁰ The Companies further expressed a commitment to evaluate whether the Encompass software would be capable of fully optimizing retirement dates and replacement options in the next Comprehensive IRP filing in 2022.⁴¹

The Commission agrees with ORS’s concern and the Companies’ proposed resolution and concludes that the Companies shall fully evaluate the capabilities of the Encompass model to perform coal retirement analysis, and engage stakeholders in enhancing the Companies coal retirement analysis before the next comprehensive IRP.

F. Generic Resource Options

The Company considered more than sixty potential generic capacity resource types in its evaluation, but narrowed the potential resource options down to a few resource options by performing technical and economic screening analyses. ORS compared the Companies’ resource cost assumptions with various data sources and found the Companies’ assumptions to be generally reasonable for many of the generic resource options.

⁴⁰ Rebuttal Testimony of Glen Snider p. 85.

⁴¹ Rebuttal Testimony of Glen Snider p. 85 l.15.

However, ORS requested the Company provide additional explanation for capital and variable cost assumptions for combustion turbine (“CT”) and battery storage resources.⁴² Company Witness Snider explained in his rebuttal testimony that the low CT capital cost reflected “the economies of scale associated with constructing multiple units at a single site”.⁴³ Witness Hayet responded in his surrebuttal testimony that, while the Companies’ explanation was reasonable, in future stakeholder process, the Companies should “discuss the reasonableness of building four CT units at a time.”⁴⁴ Company Witness Kalemba specified in his rebuttal testimony that upon investigation, the Companies identified an “issue with their standalone battery storage fixed O&M assumptions” and stated that the Companies “will correct their fixed O&M assumptions in the upcoming 2021 IRP Update.”⁴⁵ Witness Kalemba explained that the “discrepancy [in the fixed O&M costs] did not impact the analysis.”⁴⁶ Witness Hayet found the justification and commitment to correct the error in the 2021 annual IRP update to be reasonable. Witness Snider, additionally, provided supporting arguments for the Companies’ consideration of the battery storage capacity factor assumption. Witness Hayet found the arguments reasonable at this time due to the Companies’ use of production cost modeling, but recommended that “battery energy storage capacity factor be monitored and re-evaluated when the Companies begin using the Encompass model.”⁴⁷

ORS recommended the Companies include an additional solar generic resource option in its IRP modeling assumptions that reflects the kind of solar PPA prices that may be available in the market. According to witness Hayet, the Companies only modeled one solar resource in their

⁴² See recommendations 16 and 17 in Direct Testimony of Anthony Sandomato Exhibit AMS-1 p. 75-77.

⁴³ Rebuttal Testimony of Glen Snider p. 97-99.

⁴⁴ Surrebuttal Testimony of Philip Hayet p. 23 l. 4-5.

⁴⁵ Rebuttal Testimony of Matthew Kalemba p. 27-28.

⁴⁶ Rebuttal Testimony of Matthew Kalemba p. 28.

⁴⁷ Surrebuttal Testimony of Philip Hayet p. 24 l. 8.

optimization analysis, which is a utility self-build solar option. Witness Hayet testified that this created a problem because the Companies' levelized cost of energy ("LCOE") for their solar option is significantly higher than the \$38/MWh average price for solar PPA resources that were selected in DEC and DEP's recent solar resource solicitation that was conducted in North and South Carolina. As a result, solar PPA prices can be considerably lower than the cost of solar resources that the Companies can build. The Companies refused to model ORS's recommendation. This Commission recently found that:

The parties provided ample testimony that solicitation of solar and/or storage resources via a competitive solicitation has the potential to create opportunities for ratepayer savings, by allowing the utility to procure energy from such resources more cheaply than it can generate it.⁴⁸

The Commission's findings were informed in part by the SBA's testimony that DEC's own solicitation in North and South Carolina resulted in the procurement of solar resources at an average price of \$38/MWh.⁴⁹ Therefore, solar PPAs should be considered and modeled as a resource option in the Companies' IRP. However, given that the upcoming 2021 annual IRP update is so near, ORS recommended that the Companies should include market based solar PPAs in the upcoming IRP update.

Regarding the solar and storage winter capacity values, the Companies relied on its consultant, Astrapé, to derive capacity value assumptions based on a SERVIM model analysis that Astrapé performed in 2018. Based on the Astrapé results, the Companies' assumed that solar capacity would provide 1% capacity value during the winter season, and solar plus battery storage would provide 25% of the solar nameplate capacity towards meeting winter peak demand. Since the winter peak drives the need for capacity on both the DEP and DEC systems, the winter capacity

⁴⁸ PSCSC December 23, 2020, Order No. 2020-832, DESC 2020 IRP, Docket No. 2019-226-E, pg. 85.

⁴⁹ Id. p. 47.

values of solar and solar plus battery are of the main importance. Given the importance that these assumptions potentially could have on the IRP analysis, ORS recommended that further investigation be conducted regarding these values with stakeholder input, discussed as part of a stakeholder engagement process. ORS provided one example of an investigation that could be performed by the Company, which is to assess the impact on the Companies' base case resource plan if higher winter capacity value ratings were assumed such as 5% for solar and 30% for solar plus battery energy storage. Company Witness Kalembe generally agreed with ORS's recommendation and stated that the Companies "are open to discussing the results of the ELCC studies with stakeholders during the stakeholder engagement process... If after discussions with stakeholders, sensitivities of the impacts of higher capacity value of storage and/or solar on the resource plan is seen as a high priority, the Companies will evaluate those sensitivities."⁵⁰ Similarly, SBA Witnesses Lucas and Olsen put forth several considerations regarding the Companies' modeling of solar and battery storage resources in the Companies' Solar Capacity Value Study and Storage ELCC Study.

The Commission finds that the Companies shall, in their stakeholder process, investigate and re-evaluate the reasonableness of the capital and variable cost assumptions for CTs and battery storage resources as recommended by ORS, and shall correct the O&M cost of battery resources in the Companies' 2021 annual IRP update. The Commission further agrees with ORS's recommendation regarding the availability of lower PPA prices in the market and concludes that failure to model at least one additional option is not in the best interest of customers, and that the Companies shall include an additional solar generic resource option in its annual IRP update modeling assumptions that reflects the a \$38/MWh solar PPA cost. This generic resource option

⁵⁰ Rebuttal Testimony of Matthew Kalembe p. 43.

should not simply be evaluated in a sensitivity case, but should be considered a selectable resource option in all modeling runs. Additionally, based on the parties' recommendations, the Commission concludes that the Companies shall further investigate solar capacity values and solar plus battery energy storage capacity values with stakeholder input, and this should be discussed as part of a future stakeholder engagement process.

G. Customer Rate Impacts

Each of the Companies' Portfolios and sensitivities reflect a range of risks due to an unknown and uncertain future over the study period. In order to assess relative risk of each portfolio, ORS performed minimax regret and variability analysis for the Companies' IRPs and recommended that the Companies perform similar risk analysis in its future IRPs.⁵¹ A similar recommendation was made by SBA Witness Lucas.⁵² Witness Snider agreed that minimax regret analyses is "a useful tool to help distill economic results in a digestible and consumer-friendly summary."⁵³ Witness Snider indicated the Companies' willingness to adopt the minimax regret analysis to quantify risk in future IRPs and supported the use of the ORS minimax regret methodologies.⁵⁴

In addition to the calculations of PVRR for planning purposes, the Companies calculated the average retail and residential rate (bill) impacts on an annual nominal dollar basis and presented the cumulative rate impacts in 2030 and 2035 in its IRP Report.⁵⁵ The Companies calculated the annual revenue requirement for each Portfolio using the incremental investment and incremental expenses for each portfolio and then added the incremental revenue requirement to the present

⁵¹ Witness Lane Kollen addressed this recommendation in his Direct Testimony, but it was not assigned a recommendation number. It was referred to as Recommendation 26 in Witness Kollen's surrebuttal testimony.

⁵² Direct Testimony of Kevin Lucas p. 30.

⁵³ Rebuttal Testimony of Glen Sinder, p. 143, ll. 19-20.

⁵⁴ Rebuttal Testimony of Glen Snider p. 143-144.

⁵⁵ DEC 2020 IRP p. 191-192, including Table A-17.

average retail and residential rates.⁵⁶ They also calculated an average annual compound growth rate in average retail and residential rates through 2030 and 2035 and presented these results in its IRP Report.

ORS recommended that the Companies revise the calculation of the average retail rate impact on customers so that the assumptions and methodologies are consistent with the calculations of the PVRR, except for the levelization of the capital-related costs. The Companies disagreed with the ORS recommendation; however, Witness Snider stated that the Companies “agree to collaborate with ORS before the next comprehensive IRP on refining and fine tuning this analysis for consistency with the rest of the IRP analysis where appropriate.”⁵⁷ ORS Witness Kollen disagreed with the Companies’ timeline and stated that “it is [not] necessary to wait until the next comprehensive IRPs to use the same assumptions for the PVRR and customer bill impact analyses. I recommend the Companies do so in their next annual update IRPs.”⁵⁸

The Commission concludes that the Companies shall conduct minimax regret analysis and other risk analyses in its future IRPs starting with its 2021 annual IRP update. Additionally, in order to maintain a consistent and uniform methodology, the Commission agrees with ORS and concludes that the Companies shall revise the calculation of the average retail rate impact on customers in its next annual IRP update so that the assumptions and methodologies are consistent with the calculations of the PVRR, except for the levelization of the capital-related costs.

H. Other Considerations: Southeast Energy Exchange Market

⁵⁶ Response to ORS AIR 2-30, which includes an Excel workbook with the assumptions, data, and calculations.

⁵⁷ Rebuttal Testimony of Glen Snider p. 146-147.

⁵⁸ Surrebuttal Testimony of Lane Kollen p. 5 l. 17.

On December 11, 2020, the Companies filed with the North Carolina Utilities Commission information regarding the proposed SEEM platform agreement.⁵⁹ The Companies stated that the SEEM will establish “a region-wide, automated, intra-hour platform to match buyers and sellers with the goal of more efficient bilateral trading and assumes utilization of unused transmission capacity to achieve cost savings for customers in the Southeast region of the country (“Platform”).” The automated system will allow buyers and sellers to enter into trades on a 15-minute basis utilizing transmission capacity that otherwise would be unused.

Based upon ORS’s recommendations the Commission concludes that the Companies shall provide details regarding the status of the SEEM, details regarding important current and planned activities, and information regarding the monetary benefits that have been or could be achieved by implementation of the SEEM. This shall be done in future IRPs and specific details regarding what should be included in IRP Reports shall be considered in the Companies’ stakeholder processes.

NOW THEREFORE, based upon the foregoing, IT IS HEREBY DECLARED AND ORDERED THAT:

1. The Companies’ 2020 IRP and modifications and clarifications in its rebuttal testimonies, which were filed with the Commission, are the most reasonable and prudent means of meeting the electrical utility’s energy and capacity needs as of the time the plan is reviewed. Accordingly, the Companies’ 2020 IRP and modifications and clarifications in its rebuttal testimonies is approved.

2. Future IRPs must include the aforementioned prospective requirements, discussion of the stakeholder processes, and the accommodations that were agreed to by the Companies in its

⁵⁹ NCUC dockets: Docket Nos. E-7, Sub 1245 and E-2, Sub 1268; December 11, 2020 filing: <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=ee53f541-e7e5-41c2-b000-e32e5660873f>

rebuttal testimony. Failure to follow or adopt these recommendations should be explained by the Companies in their 2021 annual IRP update filing and may result in changes to the 2021 annual IRP update.

3. This Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

Chairman Williams

ATTEST:

Jocelyn G. Boyd, Chief Clerk

(SEAL)